



Report to the Rufford Small Grant

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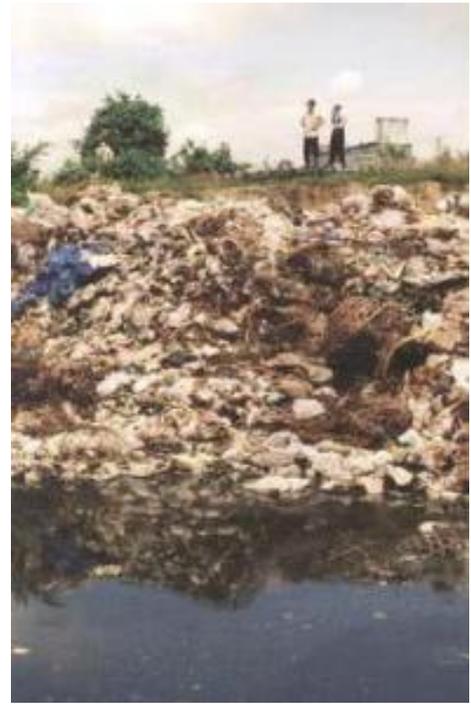
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Children returning from their plastic waste collection day

1 Introduction

Mekong Plus has specialized in community development in rural Vietnam since 1993 and in Bình Thuận province ever since. Rather than moving to another area when a project is successful, Mekong Plus decides to stay on as long as the local authorities and the people are willing and participating enthusiastically in the programs. In 2003 they expressed their concern about the growing waste problem in the region. Mekong Plus started thus to look at innovative solutions to turn this huge and increasing problem into benefits, in terms of useful recycled wastes and in terms of employment. Since 2001 Mekong Plus had already a large plastic waste collection program, involving larger and larger numbers of children (up to 40.000 people); during the last school year over 100 tons were thus collected and sold for recycling, and this generated an unexpected income for the schools of over 4200 euros. The impact on public opinion has been very significant and while everyone was skeptical and even teasing while we started, today they all applaud and ask for more. The impact is even very visible when one compares the program areas with neighbouring villages.



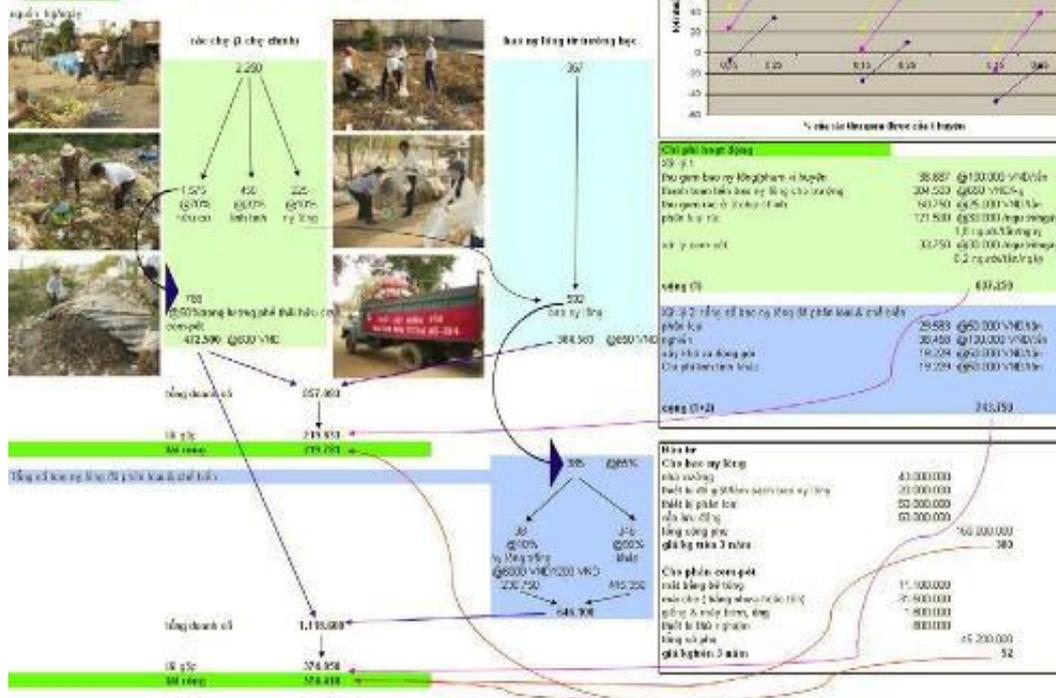
Traditional dumping ground



2 The project

In May 2005 we (under the name of *Thiên Chí*, the local NGO set up by the Mekong Plus staff) participated in a competition organized by the Vietnam office of the World Bank, about innovations for the protection of the environment. We submitted a concept based on our limited field experience, plus the advice of a few experts.

We won the award and received 6500\$ to initiate the project. The Rufford Foundation granted another 5000 pounds, and Mekong Plus complemented for the rest.



A number of difficulties emerged soon:

- ⌚ The piece of land promised by the local authorities of Đức Linh never materialized, so we had to move to the neighbouring district of Tánh Linh (where we run a similar community development program since 2001).
- ⌚ The market price of recycled plastics varied quite a lot, making it difficult to project incomes and thus the sustainability of the program. Some say this is because of imports from China.
- ⌚ One positive side effect of the campaigns done for many years: plastic waste started to disappear, poor people collecting them from the trucks carrying the waste or even from the streets around the markets.



Building of the recycling site



Therefore the composition of the collected waste from the markets and carried by the State trucks changed to a large extent: less valuable plastics, less organic waste and more various apparently unusable solid waste.

In July 2 Vietnamese experts visited the project, one being a professor from University of Agriculture and Forest in Thu Đức (near Hồ Chí Minh City). The University had cooperated with Mekong Plus in trying to find the appropriate mix of organic components to accelerate the decomposition of market waste at a small cost. But the changed composition of the waste dumped by the trucks at the project site discouraged them. Their opinion is there is too little organic waste (about 50%) to make the several sorting steps easy and not too time consuming (and thus not too expensive to sort).

However abandoning the project as the university experts suggested was not an attractive option for the local authorities. There is just not enough land available to be put aside for more and more dumping grounds –one district of 100.000 generates around 20 tons of waste every day. Instead, the project has the goal to recycle over 75% of the waste: into organic fertilizer and into recycled plastic. Indeed officials from 2 districts in the Mekong delta have also visited the project, because the land is even more scarce (and expensive) in their region.

The Bình Thuận television network has broadcasted a documentary on the project and the authorities have made their own official report: they are indeed very hopeful it will reduce the waste management problem and serve as a model for many rural districts.

3 Improvements to the model

Mekong Plus does not have the capacity to lose a lot of money for many years, so it was decided to search for improvements for another 4 months and then decide to either continue or stop the project.



Visit of the experts



Sorting with an adapted rice husking machine



The bags of half clean organic waste we sell to the Ninh Thuận company



3.1 Sorting the waste

- The initial approach was to sort the waste before its decomposition in pits. This proved to be much too time consuming and difficult.
- The second approach we tried was not to sort the waste at all, throw it into 12 m³ pits, spray it with organic components to accelerate its decomposition. This did not work because much of the waste is delivered in tight plastic bags which would allow the water and products to have a homogenous effect.
- The third option which has been adopted and which shows much better results are:
- Recover the valuable plastics as much as possible. The workers doing this partly pay themselves by selling the best of the plastic wastes, so they tend not to miss much of it.
- The bags are thorn so that their contents can decompose homogeneously.
- After 28 days the waste is taken out of the pit, dried under the sun, passed through an adapted rice



Drying under the sun, but when the rains arrive one pulls over a plastic cover.

A recycling company 200 km north of Tánh Linh is buying this at 0,02 euro/kilo. Considering the local authorities are willing to cover a small part of the cost and thus subsidize the project, we could be satisfied as the project is just sustainable at this stage.



Further sorting

3.2 Weakness of the pilot

- It is not safe to depend on just one customer
- It is not optimal for the farmers of Tánh Linh to buy organic fertilizer from a company 200 km away, especially if its product comes from Tánh Linh in the first place.
- The plastic waste is not optimized.

3.3 Tasks ahead

At present we are working on the following:

- Improve the sorting of waste: this could require a



Safer boots for the workers: there is plenty of dangerous waste like needles

travelling band to increase the productivity, a proper shelter against the rains etc. The site is still deprived from electricity and about 3 km from the first electric pole but the authorities announced it will be supplied current 2007.

- Look for the appropriate additives to produce a nutritious fertilizer: cow dung is expensive and pig dung is much cheaper etc. Tests are done with well established labs in Hô Chí Minh City before we proceed beyond small scale tests on the waste recycling site land.
- Research the local market to understand the farmers' expectations: apparently they would rather buy a lower quality (not 100% clean of other solid waste) but at a cheaper price. The price may vary indeed from 0, 07 to 0, 9 euro per kilo between various brands and products. Mekong Plus is well placed because it has a regular cooperation with hundreds of farmers who meet on various technical issues every month.
- More difficult: we would like to optimize the income from plastics by doing basic recycling on the site. We are looking for simple and low cost technology to produce plastic ropes, pipes, or sheets which would be cheaper and low quality, but good enough for use on the farm.
- The project is focusing on the needs of a rural and poor district. Around the large cities several large programs exist, with an investment beyond 3 million euros, including the production of electricity from waste etc. The constraints in a poor rural district are totally different and we aim at limiting the investment for this model at around 10.000 euros, and it must be sustainable



The still neglected plastics



Cow dung is collected by the farmers, it is expensive to buy

4 Financial report

The total expenses are approximately as planned:

In GB Pounds	RSG	Total
Construction, equipment	4121	6427
Salaries	658	3088
Small supplies	205	770
Communications		980
Transport		960
Miscellaneous		946
Total	4983	13171

The organic waste is sold half processed to another company at only 0, 02 euro/kilo

- The plastic waste from the recycling plant is sold directly by the workers, sorted but unprocessed, by the workers and constitute part of their pay.

5 Budget for 2007

We do not plan any substantial investment in 2007. Once the model will be defined one will decide which further investment may be required to increase productivity, increase product quality and reduce costs. In 2007 we plan to refine the present pilot and mainly test the organic fertilizer with the farmers: their acceptance is a crucial condition for the continuation of the project and for it to be turned into a stable self sustained program.

We would like to apply to the Rufford Small Grant Foundation for 2000 Pounds, to be used for training and promotion among the farmers, and for research purpose like lab testing, purchase of small equipment.

Bernard KERVYN, 12/17/2006